REMARKS/ARGUMENTS

The December 16, 2003 Office Action has rejected all claims under 35 U.S.C. § 112, double patenting and 35 U.S.C. §§ 102 and 103. The Office Action has also requested clarification of the Sequence Listing.

In light of the arguments below and the amendments above, Applicants respectfully request reconsideration.

On March 24, 2004, Inventor David Watkins and Attorney Jean C. Baker interviewed Examiner Li telephonically. Applicants and their attorney would like to thank Examiner Li for the courtesy of her time and for her helpful suggestions. Applicants identified each element of the Examiner's rejection and described their planned response. The response recited below is essentially that proposed by Applicants during the telephone interview. Examiner Li asked to see the response in written form.

Specification

Applicants had requested transfer of a computer readable form of the Sequence Listing of a prior PCT application. During the March 24, 2004 interview, Examiner Li confirmed that the Sequence Listing had become separated from the PCT application and asked Applicants to resubmit the Sequence Listing. Applicants have enclosed a copy of the Sequence Listing, a CRF copy of the Sequence Listing and a statement that the content of the paper and computer readable copies are the same.

Double Patenting

The Examiner has provisionally rejected claim 1 under the judicially created doctrine of obviousness-type double patenting. Applicants have now incorporated the subject matter of a non-rejected claim (claim 4) into claim 1 and believe that this rejection is now moot.

§ 102 Rejection

The Office Action has rejected claim 1 under 35 U.S.C. § 102(e) and § 102(f) as being anticipated by co-pending application no. 09/434,830. Applicants have now amended claim 1 to incorporate the content of a non-rejected claim, claim 4. Applicants believe this rejection is moot.

§ 103 Rejection

The Office Action has rejected claims 1 and 4 – 13 under Fuller, et al., (Immunol. Cell. Biol. 75:389-396, 1997) and Fuller, et al. (Vaccine 15:924-925, 1997), in view of Hanke, et al. (J. Gen. Virol. 79:83-90, 1998), Borgne, et al. (Virol. 240:304-315, 1998), and further in view of Loktev, et al. (J. Biotechnol. 44:129-137, 1996). During the March 25, 2004 phone interview, Examiner Li referred to a previous Office Action and repeated the Action's characterization of the references. Dr. Watkins pointed out that several of the references (both Fuller, et al. references and Hanke, et al.) were not drawn to production of CTL and at least one of the references, when subjected to closer scientific scrutiny, was shown to be inadvertently mischaracterized by the Examiner.

Dr. Watkins described three elements of immune response: antibodies, helper T cell, and CTL. Dr. Watkins further explained that in his research for HIV vaccines, he was interested in only CTL response. Dr. Watkins pointed out that antibody responses to HIV had been investigated and had been ineffective for vaccines due to HIV's unusual variability.

Dr. Watkins further explained that immunological stimulation that would provoke and antibody response would not necessarily provoke a good CTL response. For example, Dr. Watkins pointed out that the Fuller, et al. disclosures and Loktev, et al. all encode or use whole protein, which would be thought to be more efficacious for production of an antibody response. Dr. Watkins then characterized each of the references and described to the Examiner why one of skill in the art would not have considered either Fuller reference, Loktev or Borgne, et al. as useful to construct a vaccine designed to evoke a significant CTL response. Dr. Watkins told the Examiner that the Hanke paper did disclose a multi-epitope construct.

Dr. Watkins characterized of the references as follows:

Fuller, et al., Vaccine and Fuller, et al., Immunology and Cellular Biology deal with antibodies.

The Loktev, et al. paper uses protein expressed in *E. coli* for vaccination and again looks at antibody and helper T cell responses in mice. No CTL were measured.

The Hanke paper used a more relevant MVA-multiepitope construct to induce low levels of CTL in mice.

The Borgne, et al. paper uses a DNA vaccination in mice with a by D^d restricted CTL epitope. They find CTL responses, albeit weak and requiring *in vitro* stimulation. They then vaccinate two Chinese macaques with their construct encoding only 23 amino acids of the HIV Lai V3 loop. Dr. Watkins noted that it was not surprising that this worked in mice with the correct D^d MHC class 1 molecule but that it is incredibly surprising that this "worked" in the two rhesus macaques, since macaques do not express mouse MHC class 1 molecules. Furthermore, Dr. Watkins pointed out that the data in Table 2B are confusing, to say the

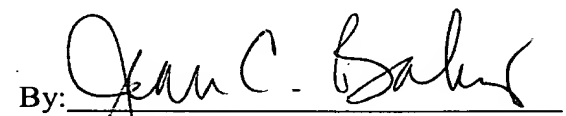
least; Borgne, et al. get different results using two different vaccina HIV Env constructs. The likely explanation for these data is non-specific binding and, thus, this data does not support the applicability of this approach to generating CTL in primates.

Therefore, one of skill in the art would not have been motivated to combine the five citations to product Applicants' invention. There is no teaching within the five citations that would motivate one to combine them for the purpose of high CTL production and no teaching that an appropriately high CTL production would be achieved if one were to do so. As Applicant stated during the interview, this CTL production is the highest that Applicant has ever measured and there is certainly nothing within these references that speaks to any reasonable expectation of success for this concept. Applicant notes that the claims are now drawn to human vaccines and a particular level of CTL expression.

Applicants have enclosed a Petition and Fee for One Month Extension of the Time. No other fees are believed necessary to enter this response. However, if fees are necessary, please charge Deposit Account 17-0055.

Respectfully submitted,

David I. Watkins, et al.

By: 

Jean C. Baker
Quarles & Brady LLP
Reg. No. 35,433
Attorney for Applicant
411 East Wisconsin Avenue
Milwaukee, WI 53202-4497
414/277-5709